DOCUMENT RESUME

ED 326 118 HE 024 018

AUTHOR Milam, John H., Jr.
TITLE Paradigms of Theory in Higher Education. ASHE Annual Meeting Paper.
PUB DATE Nov 90
NOTE 52p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (Portland, OR, November 1-4, 1990).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Content Analysis; Higher Education; *Literature Reviews; *Models; Periodicals; Research Methodology; Social Psychology; Social Science Research; *Social Sciences; Theories
IDENTIFIERS *ASHE Annual Meeting

ABSTRACT

A content analysis was done of the past 3 years of articles from five journals (Journal of Higher Education, Review of Higher Education, Research in Higher Education, the American Educational Research Journal, and the Journal of College Student Personnel) in order to gather and examine empirical evidence of the impact of paradigms, through journal literature, on the higher education knowledge base. Analysis was done according to the paradigm schema of Burrell and Moran (1979) and revealed that the bulk of journal literature was functionalist (that is, that it is based on realist, positivist, determinist, and nomothetic approaches to social science). No examples of the radical humanist paradigm were found, and only a few radical structuralist studies (combination of functionalist and radical humanist paradigms) appeared. Thirty articles made use of at least one assumption of radical sociology in the form of conflict, domination, contradiction, emancipation, and deprivation, but no assumptions of radical change were present in the journal literature. There was complete lack of research in the interpretive paradigm (basically functionlist but more nominalist, anti-positivist, voluntarist, and idiographic in its approach to social science). The results indicated that higher education knowledge is dominated by the assumptions of objective social science and the sociology of regulation (functionalism). The knowledge base is thus incomplete because of the unwillingness to explore the new world of alternative paradigms. Contains 78 references. (GLR)

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PARADIGMS OF THEORY IN HIGHER EDUCATION

John H. Milam, Jr., Ph.D.

Institutional Analysis and Planning
West Virginia University
306 Glennlock Hall
Morgantown, WV 26506

(304) 293-4906
4320@WVNVM.BITNET

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ASSOCIATION FOR THE STUDY OF HIGHER EDUCATION

This paper was presented at the annual meeting of the Association for the Study of Higher Education held at the Red Lion-Jantzen Beach in Portland, Oregon, November 1-4, 1990. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

PARADIGMS OF THEORY IN HIGHER EDUCATION

I. The Ongoing Paradigm Debate

The ongoing debate about paradigms in the social sciences has been mirrored in recent years in the field of higher education. Interesting examples of this debate are found in the work of Lincoln (1986, 1989a, 1989b), Kuh et al. (1986a, 1986b, 1987), Conrad (1982, 1989), Keller (1985, 1986), Peterson (1986), Thelin (1986), and Tierney (1987).

While discussion of paradigms in higher education is a somewhat recent phenomenon, other types of studies may contribute to an understanding of the concept of paradigms. One related body of literature consists of studies about the nature of research, knowledge, and inquiry in higher education (Hobbs and Francis, 1973; Kellams, 1975; Silverman, 1982, 1985, 1987; Bradley et al., 1985; and Kuh et al, 1986a, 1986b). A second related body of knowledge includes studies about the journal literature and analysis of variables such as authorship, author gender, institutional affiliation, collaboration, author field/discipline, the definition of core journals, citation practices, research methods, and topics of research (Hunter and Kuh, 1987; Bean and Kuh, 1988; Kuh et al, 1986a, 1986b; Volkwein et al, 1988; Silverman, 1982, 1985, 1987; Barnes et al, 1986; Bayer, 1983; Smart and Elton, 1981; Smart, 1983; Budd, 1988)

These three topical areas (paradigms, journal literature, and research types) may be thought of as parts of an interrelated approach to the study of paradigms in higher education.

II. Purpose of Research

The research presented in this paper incorporates the topics of paradigms, the journal literature, and types of research in order to conduct research about the paradigmatic nature of theory and research in the field of higher education.

Four studies were undertaken as part of this author's dissertation research about paradigms in higher education (Milam, 1989). These studies involved:

(1) an exhaustive, integrative review of the literature about paradigms, the journal literature, and research/inquiry types as these pertain to higher education and related fields such as educational administration and organizational theory;

(2) a content analysis of the current journal literature, looking for the presence of paradigms;

(3) a set of illustrative case studies which examine how the assumptions, methodologies, and findings of particular research studies might have been different if the researcher had employed a different paradigm perspective;

(4) an empirical essay which uses the results of the first three studies to analyze the nature and future of the higher education knowledge base.

This paper presents the methodology and results of the content analysis of the journal literature. The integrative review, case studies, and empirical essay will be presented elsewhere. Up until this point, there has been no published attempt to gather empirical evidence of the impact of paradigms

on the higher education knowledge base. This research is presented in the spirit of trying to, as Lincoln suggests, "draw a map of territory yet to be explored" (1986, p. 141).

III. Caveat Emptor

This study falls within the paradigm of traditional, quantitative, functionalist research. It is understood that a different set of assumptions and methodology would have been used if an alternative paradigm perspective were employed. Certainly, different findings might have resulted.

IV. Theoretical Perspective

The Burrell and Morgan (1979) book Sociological Paradigms and Organisational Analysis is discussed in the journal literature as a useful framework for analyzing theory and research (Conrad, 1989). In a review of the book in the Administrative Science Quarterly, Louis states that the work "has been widely cited" (1983, p. 153). Using the techniques of Smart (1983) and Elton and Smart (1983), a series of computerized searches of the Social Science Citation Index database were undertaken as part of this research in order to map the influence of this work in different disciplines. The results show that between 1979 and 1988 the work is cited in 91 different journals in 225 references. Eighteen of these 91 journals are education specific, and three of them are devoted to higher education.

Clark (1985), Bates (1988), Griffiths (1983), Foster (1986),

Peca (1986), and other scholars in educational administration find that the Burrell and Morgan paradigm schema is useful in evaluating the nature of research in their field. Conrad (1989) makes extensive use of the Burrell and Morgan paradigm terminology in his A.S.H.E. Presidential Address. Other scholars such as Kuh and Whitt (1989) and Lincoln (1986) cite Burrell and Morgan, but focus primarily on other paradigm perspectives such as constructivism. .

Since the Burrell and Morgan schema is regarded highly by scholars within educational administration, cited widely across disciplines, and used by some higher education scholars as a definition of paradigms, it was decided that the central focus of this research would involve analyzing higher education according to the Burrell and Morgan schema.

V. Burrell and Morgan Paradigm Schema

Central to the Burrell and Morgan conception of paradigms is their belief that all social theories are based upon both a philosophy of science and a theory of society. These philosophies are discussed as two broad dimensions of theory and as different sets of meta-theoretical assumptions.

A. Social Science

According to Burrell and Morgan, there are two mutually exclusive approaches to social science which determine how assumptions fit into theoretical frameworks. These approaches have been labeled subjective and objective and incorporate four

types of assumptions. These social science assumption sets may be considered as pairs of opposites:

SUBJECTIVE	OBJECTIVE
Nominalism	Realism
Anti-positivism	Positivism
Voluntarism	Determinism
Idiographic	Nomothetic

Each assumption set is described as follows:

(1) Nominalism versus Realism - Ontological assumptions concern the nature and essence of what is being studied. A subjectivist approach to ontology is described as nominalist because the names and labels of the social world are considered to be the products of individual cognition. An objective approach is described as realist because it considers the social world to be made up of real, tangible structures that exist as empirical entities which may be labeled and measured.

(2) Anti-Positivism versus Positivism - Epistemological assumptions concern the grounds for understanding knowledge. Positivism finds its basis in the natural sciences and involves explaining and predicting the social world by searching for underlying regularities, causal relationships, and patterns. An anti-positivist sees the world as relativistic and subjective and denounces the positivist approach.

(3) Voluntarism versus Determinism - These assumptions concern human nature and focus on the relationship between human beings and their environment. A voluntarist point of view sees people as being completely autonomous and free-willed, where a determinist portrays people as being controlled by situational,

behavioral, or environmental variables.

(4) Idiographic versus Nomothetic - Methodological assumptions concern the ways in which one investigates and obtains knowledge of the social world. Researchers with idiographic assumptions focus on the importance of first-hand, subjective knowledge, such as shown in ethnography and naturalistic inquiry. Researchers using nomothetic methods focus on systematic protocol and technique and reflect the approach and methods of the natural sciences.

B. Sociology

Burrell and Morgan explain that in sociology there are two mutually exclusive approaches to the nature of society which they label as the sociology of regulation and the sociology of radical change. The sociology of regulation is concerned with why society works the way it does and with better integrating societal processes. The sociology of radical change is based on the premise that conflict and contradiction are inherent aspects of society that must be considered in any social analysis. Seven assumptions make up the sociology dimension of paradigms, and these are considered as pairs of opposites:

REGULATION	RADICAL CHANGE
Status quo	Radical change
Social order	Structural conflict
Consensus	Modes of domination
Social integration and cohesion	Contradiction
Solidarity	Emancipation
Need satisfaction	Deprivation
Actuality	Potentiality

Each assumption set is described as follows:

(1) Status Quo vs Radical Change - Where the sociology of regulation is concerned with regulating the status quo and with analyzing change at a superficial level, the sociology of radical change is concerned with radical change from structural and/or subjective point of view.

(2) Social Order versus Structural Conflict - Where regulation sociology describes conflict as one of many processes and patterns which are part of the self-regulating mechanisms of society, the assumption of structural conflict is concerned with radical change to alleviate the conflict which is inherent in the structures of society.

(3) Consensus versus Modes of Domination - Consensus is concerned with the integration of society through shared values and norms. Researchers who make assumptions about modes of domination focus on analyzing the forces of domination in a society which they believe is prone to disintegration.

(4) Social Integration and Cohesion versus Contradiction - The assumption of social integration is concerned with the coordinating, cohesive, and integrating functions of society. The assumption of contradiction addresses the heterogeneity, imbalance, and antagonistic and divergent social forces of the social world.

(5) Solidarity versus Emancipation - Solidarity focuses on understanding how existing patterns are maintained in society as a whole. The sociology of emancipation focuses on how society's

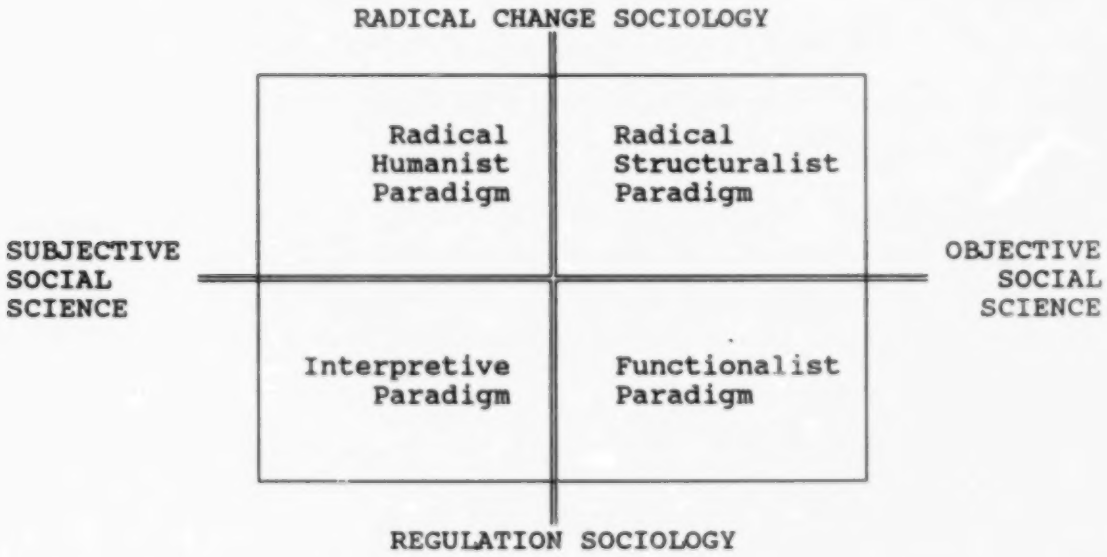
patterns limit and stunt human potential for development. Emancipation perspectives point to radical change.

(6) Need Satisfaction versus Domination - The need satisfaction assumption focuses on the satisfaction of individual and group needs, sometimes using the metaphor of the organism to illustrate its sociology. Deprivation sociology is concerned with the ways in which society erodes and prevents human fulfillment through deprivation.

(7) Actuality versus Potentiality - Actuality sociology is interested in understanding the ways in which society currently works and with analyzing the nature of the status quo. The sociology of potentiality is grounded in the need to plan future radical change to alleviate social conflicts.

C. Paradigm Definitions

Burrell and Morgan describe their paradigm schema as an analytic tool which can be represented as a grid diagram:



Each of the four basic paradigms is determined by its dimension within social science and sociology. Using these four social science and eleven sociology sets of assumptions, a detailed definition of the different paradigms can be constructed as follows:

The functionalist paradigm has a realist, positivist, deterministic, and nomothetic approach to social science. The primary interest of this paradigm in terms of social theory is with the status quo, social order, consensus, social integration and cohesion, solidarity, need satisfaction, and actuality.

The interpretive paradigm has the same regulation sociology assumptions, but is nominalist, anti-positivist, voluntarist, and idiographic in its approach to social science.

The radical humanist paradigm employs these same subjective social science assumptions, but is oriented to radical change, conflict, contradiction, deprivation, domination, emancipation, and potentiality. The radical structuralist paradigm, on the other hand, shares these same radical sociology assumptions, but incorporates an objective view of social science that is realist, positivist, determinist, and nomothetic.

VI. Methodology

In order to obtain an understanding of the current higher education knowledge base, a content analysis was done of the immediate past three years of articles from five journals, including the Journal of Higher Education, the Review of Higher

Education, Research in Higher Education, the American Educational Research Journal, and the Journal of College Student Personnel (renamed the Journal of College Student Development in 1988). These five representative journals have been identified as having either a large proportion of higher education articles or as being high prestige journals (Bayer, 1983; Hunter and Kuh, 1987; Silverman, 1987). All feature articles which appeared between 1986 and 1988 which concern higher education were coded for classification.

The methodology used for the content analysis is based upon the work of Covert (1977), Glaser and Strauss (1967), Patton (1975, 1978, 1980), and Lincoln and Guba (1985). A traditional, demographic content analysis of the journal literature was performed using emergent, polychotomous coding categories. The demographic analyses were conducted in the manner of similar content analysis studies of the higher education journal literature conducted by Silverman (1987, 1985, 1982), Bayer (1983), Hunter and Kuh (1987), Kuh et al. (1986a, 1986b), Bean and Kuh (1988), and Smart (1983).

The techniques of traditional and paradigmatic content analysis were designed to ensure validity and replicability. The notion of "person as instrument" as described by Patton (1980) and Lincoln and Guba (1985) was paramount to the data gathering process. Other qualitative measures taken to ensure validity included peer debriefing, keeping a methodological log, and memo-writing.

After bibliographic and demographic data were recorded, decision rules and dichotomous, a priori coding categories were used in order to catalog articles along the four paradigms, two dimensions, and eleven sets of assumptions which are defined in the Burrell and Morgan schema. A series of sixty-four content analysis questions were answered in sequence to code and label each article. These questions were developed and pilot tested over a period of time to stress all important parts of each Burrell and Morgan assumption definition. They were designed to look for clues to an article's implicit or explicit meta-theoretical assumptions. Using the database management program Dbase III+, extensive coding notes were recorded to document the determination of classification category.

Since 95% of all articles are predicted to be functionalist (Griffiths, 1983), it is particularly important to understand any non-functionalist assumptions. Therefore, memos were recorded for any subjective or radical sociology assumptions which appear in the literature.

VII. Results

In the sections that follow, the content analysis results are discussed in depth. The results of the traditional form of quantitative, content analysis are described first, followed by the paradigmatic analysis results. Both sets of results are discussed in terms of topic, method, and authorship variables, with each of these linked to journal variables.

A. Traditional Content Analysis Results

A total of 471 articles appeared in the five journals over the period from 1986 through 1988. Excluded from the analysis were commentaries, editorials, book reviews, and certain non-feature articles such as the Journal of College Student Personnel/Development's series "From the Campus." In four of the five journals, all articles concern higher education issues. In the American Educational Research Journal (AERJ), only 19 articles in the immediate past three years concern higher education. Eighty-six articles were published in the Journal of Higher Education (JHE); 64 articles in the Review of Higher Education (RevHE); and 112 in the journal Research in Higher Education (RHE). Almost twice as many articles (190) as each of these three were published in the Journal of College Student Personnel (JCSP, 129 articles), which changed its name in 1988 to the Journal of College Student Development (JCSD, 61 articles). This continuous journal is referred to as JCSP/D. All journals are referred to by their abbreviation.

Descriptive, quantitative frequencies are provided for each area of analysis discussed here. Seven tables are constructed to present the results of the traditional content analysis. These tables include data about: (1) frequent topics by journal; (2) frequent research methodologies by journal; (3) frequent authors by type of authorship; (4) frequent authors by journal; (5) frequent institutional affiliation of authors by journal; (6) authors' field by journal; and (7) author gender by journal.

These tables are available from the author upon request.

Inferential analysis was done from these descriptive statistics. The value of this level of analysis is in exploring the presence of possible patterns. Other statistical techniques should be employed before stronger conclusions may be reached.

1. Topics

Each journal article was catalogued with up to three descriptors. An analysis of a thesaurus of descriptors for these articles produced using Dbase indicates that a wide range of topics are covered by the journal literature. The most frequent of these topics are student development, psychology/ counseling, faculty/professoriate, and college students. These results are skewed somewhat by the number of articles on college student-related topics published in JCSP/D. When JCSP/D is separated out, only the topic of faculty/professoriate remains among these top four choices. Enrollment and professional higher education issues follow in frequency among all journals.

RevHE and JCSP/D published more articles on minorities and affirmative action than did the other three journals. JCSP/D and JHE published more on issues of women/sexual abuse/gender. However, all of the journals published some articles on these different topics over the course of the three years.

To some extent, the nature of each journal is reflected in the topics of articles published. Proportionally, AERJ published more articles on psychology/counseling and instruction/teaching topics than did the other journals. JCSP/D focused on student

development, psychology/counseling, college students, and student affairs. RevHE showed a greater interest in faculty/professoriate, the field of higher education, and research methodology. JHE fostered the same level of interest in faculty/professoriate and higher education, but also moved into topics of enrollment, women/sexual abuse/gender, academic achievement, and instruction/teaching. JHE is the only journal which devoted more than a few articles to the issues of governance and quality. Like JHE, RHE also promoted topics of faculty/professoriate, enrollment, higher education, and instruction/teaching. RHE is the only journal to have offered a large number of articles on the economics/finance of higher education. College outcomes, a broad category which encompasses student assessment, is another frequent topic among all five journals, especially RHE, which published 13 articles on this topic.

Some clues as to the nature of each journal may be learned from examining topics on which articles are not published. Of the 30 main topic areas, AERJ published on 17 of them. This may be skewed by the low number of articles on higher education issues published in this journal over the past three years. JCSP/D published on all but two topics, general education and history. JHE published on all but two topics, student affairs and staff development. RevHE did not publish on seven topics, including academic achievement, affirmative action, English/writing, staff development, athletics, general education, and history. The last six of these topics were infrequent overall choices

among all five journals. RHE published on all but four topics, including staff development, athletics, general education, and history.

It is somewhat surprising that so few articles were published on some of the major issues of higher education, such as leadership and general education. Perhaps different journals which were not included in the content analysis account for this lack. Community college topics were not covered much in these five journals. Only RevHE and RHE published on the topic of community colleges at all. There was also little space allotted to topics of history, law, athletics, and technology. Other topics which appeared only once are collapsed into the "Other" category.

2. Methodologies

Approximately 78% of the journal articles report on some form of original research, while 22% consist solely of intellectual essays. Each research article was assigned descriptors about the use of methodologies. The results indicate that quantitative methods are overwhelmingly employed in most articles, although some qualitative methods are used.

Standardized instruments and/or testing are the most frequently used data gathering method, the basis for one-third of all journal articles. Although all types of surveys and questionnaires could be termed "instruments," the term "instrument" was coded as such only if the survey, questionnaire, or test was described as having a theory-derived basis for quantitative

measurement. Usually, a researcher's use of a term to describe instrumentation was maintained in coding.

True qualitative data analytic techniques such as the constant comparative method are used rarely (5 articles). It is interesting to note that where 102 articles used questionnaire/-surveys, only 53 referred to or hinted at any use of content analysis. It is possible that this technique was mentioned only when there was some "qualitative," "subjective," "impressionistic," or "opinion" data to analyze, such as responses to open-ended questions. Interviews are used in approximately 10% or 45 of all studies, and case studies in 3%. Observation and evaluation are each used in 2% of all studies. Only a handful of studies incorporate the keeping of logs/journals, site visits, or ethnography.

Each of the five journals published some articles which use qualitative methods. The use of questionnaire/surveys and content analysis is found in all five journals. Case studies are used more frequently in RevHE articles; and only in RevHE and JHE is the constant comparative method used in research.

RHE acknowledges its adherence to standards of quantitative research as part of its self-description as the official journal of the Association for Institutional Research (AIR). This focus is evident in the journal's greater rate of publishing research articles which use complex statistical tools such as causal modeling, factor analysis, and discriminant analysis. Both RHE and JHE, which is affiliated with the American Association of

Higher Education, published a high number of articles which used longitudinal or cohort databases. The Cooperative Institutional Research Project (C.I.R.P.) freshman survey database is cited frequently as a source of data for longitudinal studies. JCSP/D, RHE, and AERJ all published a number of studies which use instruments or tests. The official journal of the Association for the Study of Higher Education (ASHE), RevHE is the least quantitative-focused journal, although 9 factor analysis studies and 9 regression studies were published over the three-year time period.

Experimental designs are used in 7 of the 19 AERJ articles, not unusual since this is the official journal of the American Educational Research Association (AERA). What is surprising is the case of JCSP/D, where 14 studies use experimental designs. JCSP/D also reports the use of sophisticated techniques such as discriminant analysis (14 studies), factor analysis (11 studies), and MANOVA (11 studies).

3. Authorship Variables

Authorship variables coded in the content analysis include: (1) frequent authors by type of authorship (sole, first of two, second of two, first of three or more); (2) frequent authors by journal; (3) institutional affiliation of first author; (4) field of first author; and (5) gender of first author.

Only 21 authors published three or more articles among the 471 total articles, accounting for 19% (88) of all articles. The top two authors, Pascarella and Smart, published in several

different journals. The third ranking author, D.G. Creamer, published only in JCSP/D. Three of the most frequent authors published only in RHE, and two more published only in JCSP/D, while the rest published in more than one of the five journals. Five of the frequent authors only published as sole authors. However, the top seven frequent authors all published in diverse authorship arrangements. More than one-half of all frequent authors published as either the first of three authors or the second of two authors.

Among all authors, only twelve institutions are represented with eight or more articles. The overall leader is Virginia Tech, with 16 articles, followed by the University of Illinois at Chicago (14), Penn State (12), and the University of Michigan (12). Fifty-two different institutions are represented with 2 or more articles. Institutions with 5 or more articles usually have authors which are published in at least two of the core journals.

Among all first authors, the top five fields are psychology/counseling (20%), higher education (13%), student affairs (11%), various administrative roles (10%), and education (9%). The results are dominated by the large number of articles published in JCSP/D. If this journal is separated out, psychology/counseling and student affairs do not remain among the top fields. Higher education remains a frequent field, especially among those authors publishing in JHE (17 of 86) and in RevHE (22 of 64). Working administrators published frequently in RevHE (14 of 64) and in RHE (19 of 112). Among those fields outside of

education from which authors published, 10 of 86 JHE articles are by sociologists and 7 are by professors of management. More business, economics, and finance faculty published in RHE. This parallels RHE's increased rate of publication of articles on these topics. RHE did not consistently list authors' field during all three years of the analysis. On the average for recorded fields, 38% of all articles come from authors outside of education. This rate varies for each journal, with AERJ 28%, JCSP/D 49%, JHE 41%, RevHE 13%, and RHE 35%. The high rate of non-education authors found in JCSP/D may be accounted for by the inclusion in this coding category of psychology/counseling, which collapsed the subcategory of authors from educational psychology.

Traditional use of first names was the determinant in coding the gender of the first author. For those first names which fit this coding method, 143 authors are listed as female, for a total of 30% for all articles. This ratio varies for each journal, with AERJ 26%, JCSP/D 38%, JHE 30%, RevHE 30%, and RHE 19%. Within JCSP/D, a significant increase is seen from the first two years of JCSP, which published 29% women authors, to JCSD in 1988, which published 56% women authors.

B. Paradigmatic Content Analysis Results

Paradigm classification results are reported descriptively as the percentage and number of articles falling within each of the four paradigms, two dimensions, and eleven sets of assumptions. Examples of studies are chosen to illustrate each paradigm, dimension, and assumption set. Topic, method, authorship,

and journal variables are related to each of these sample studies and generalizations about each assumption and dimension are suggested. These inferential conclusions discuss the tensions, coding problems, similarities, and differences which are found between assumptions, dimensions, and paradigms. The discussion will focus primarily on the use of non-functionalist assumptions.

Quantitative results from the paradigmatic content analysis are presented in a second set of tables. These tables include information about: (1) frequent authors by non-functionalist assumption usage (subjective and radical change); (2) frequent institutional affiliations of first authors by non-functionalist assumption usage; (3) frequent fields of first authors by non-functionalist assumption usage; (4) topics by non-functionalist assumption usage; (5) methods by non-functionalist assumption usage; (6) authors' sex by non-functionalist assumption usage; (7) journal by non-functionalist assumption usage; (8) paradigm usage by journal; (9) paradigm usage by authors' sex; and (10) overall paradigm usage. These paradigm tables are available from the author upon request.

(1) Social Science Assumption Results

(a) <u>Nominalism versus Realism</u> -

There are few examples of nominalism to be found in the past three years of the journal literature. Nominalist assumptions are expressed in only a handful of article topics, including articles about higher education (4), research methodology (4), and organizational theory (2). Seven of the 8 articles are

essays. The one example of a research study among the 8 uses questionnaire/surveys, telephone interviews, and content analysis. Most of the nominalist articles were published in either JHE (3) or RevHE (3). Although 2 nominalist articles come from sociologists, the other 6 come from within education, with 2 of these from professors of higher education (Tierney, 1987; Lincoln, 1986). The only frequently cited institutions from which nominalist authors come are the University of Iowa, U.C.L.A., Penn State, and Arizona State. Of the most frequently published authors, only Tierney makes use of the nominalist assumption. Three of the 8 authors (37%) are women. An example of nominalist research is Hughes (1987). An example of realist research is Pascarella et al. (1986).

(b) Anti-Positivism versus Positivism -

No examples of anti-positivist research are found in the current journal literature. Seven essays address a few topics in an anti-positivist manner, mostly the topics of higher education and research types. Two essays focus on instruction/teaching and 2 more touch on aspects of organizational theory. Most of those authors writing with anti-positivist assumptions come from fields within education, including 3 higher education professors (Kuh et al., 1987; Lincoln, 1986; Tierney, 1987). A professor of management, Wilson (1988) is the only non-educator. Penn State represents the only frequent institutional affiliation. Tierney and Kuh are among the most frequent authors. Only one of the 8 anti-positivist authors is female. An example of positivist research

is found in Jones (1987). An anti-positivist example of an essay is Tierney (1987). There are no examples of anti-positivist research.

(c) Voluntarism versus Determinism -

For a number of studies, it is difficult to code an assumption about human nature. Only three essays touch sufficiently on voluntarist attitudes to be labeled as such, and there are no examples of research with voluntarist assumptions. As Burrell and Morgan note, "The human nature debate in its widest sense involves many other issues which we have not referred to here" (1979, p. 9).

This handful of voluntarist essays deals with the topics of student development, higher education, research methodology, and instruction/teaching. One of the 3 authors is in teacher education, one is an administrator, and the third is from religious studies (the only author in the literature from this field). None of the voluntarist writers are among the list of frequent institutional affiliations or frequent authors, and none of the authors are women. An example of determinist research is found in Smart (1986). An example of a voluntarist essay is provided by Wilson (1988).

(d) Idiographic versus Nomothetic -

Difficulties in coding this assumption type occur because of confusion over philosophy and the use of methodologies. Although 10% of all studies involve some form of interview technique, the use of this method is not necessarily qualitative, idiographic,

or subjective. Clearly, the majority of articles (96%) in the literature are nomothetic, steeped in the traditions and methods of the natural sciences.

A number of different topics are addressed by the 19 idiographic studies. Those topics studied by two or more articles include: higher education (8), research methodology (6), instruction/teaching (4), organizational theory (4), leadership (4), faculty/professoriate (3), and minorities/blacks (2). It is interesting to note that of the 9 studies in the literature which deal with aspects of leadership, 4 make idiographic research assumptions.

Only one of the 19 studies uses an instrument/test. As expected from the assumption definition, none of the articles use statistics. Among the frequently used idiographic methods, interviews are used by 11 studies, followed by: content analysis (7), case studies (6), observation (4), questionnaire/surveys (3), and the constant comparative method (3).

Among the idiographic authors, seven are administrators. This figure is somewhat surprising, since the literature on the scholarly productivity of administrators depicts their lack of time for research and writing (Mooney, 1989). Other frequent fields from which idiographic authors come are higher education, student affairs, education, and sociology.

Four of the frequent institutional affiliations are represented among the idiographic authors, each with one article. Two frequent authors have one idiographic article - Creamer (Creamer

and Creamer, 1986) and Tierney (1987). Seven of the 19 articles (37%) are written by women. An example of nomothetic research is found in Barnes et al. (1986). An idiographic example of research is Mitchell (1987).

(2) Social Science Dimension Results

The majority of articles (466 or 99%) are objective in their orientation to social science. A total of 446 articles (95%) are purely objective, with no strands of the subjective approach. An example of the typical objective article is Pascarella et al.'s (1988) research study entitled "The Influence of College on Humanitarian/Civic Involvement Values.

Twenty-five articles touch on at least one subjective assumption, with 13 of these involving some form of research. Among those articles coded in subjective assumption categories, 8 are nominalist, 7 anti-positivist, 3 voluntarist, and 19 idiographic.

Five articles show evidence of a majority of the subjective assumptions: Lincoln, 1986; Keller, 1986; Tierney, 1987; Menges, 1988; and Wilson, 1988. All of these articles are intellectual essays. Lincoln's (1986) essay, entitled "A Future Oriented Comment on the State of the Profession," describes how scientific study is being replaced by new paradigms of inquiry. Both the Lincoln and Keller articles were published in a special issue of RevHE devoted to an analysis of research and inquiry in higher education. Keller (1986) severely criticizes traditional quantitative methods as having limited the field of higher education, a

view shared by Tierney (1987), who argues for the use of qualitative methods. Addressing similar issues in research on teaching, Menges (1988) and Wilson (1988) each criticize the positivist paradigm. Menges makes a case for the interpretive paradigm, using a paradigm definition very similar to Burrell and Morgan's (1979). Wilson uses Freire to criticize educational philosophy with a critical theory type of perspective.

The content analysis results show that all 5 subjective articles were published by RevHE. RevHE is the subjective leader among the 5 journals, publishing 3 nominalist, 5 anti-positivist, 2 voluntarist, and 12 idiographic articles. JHE published 3 nominalist, one anti-positivist, one voluntarist, and 4 idiographic articles. JCSP/D published one nominalist, one anti-positivist, and 3 idiographic articles. AERJ and RHE did not publish any articles with subjective assumptions.

The two most frequent topics of articles with subjective assumptions are research methodology and the field of higher education. Research methodology is the topic of 4 nominalist, 7 anti-positivist, 2 voluntarist, and 6 idiographic articles. The field of higher education is discussed in 4 nominalist, 5 anti-positivist, one voluntarist, and 8 idiographic articles. Frequent research methods are found in only two assumption categories. Among the 9 nominalist articles, questionnaire/surveys are used by one, content analysis by one, and interviews by one. The idiographic articles show the following use of methods: interviews (11), content analysis (7), case studies (6), observation

(4), constant comparative method (3), questionnaire/surveys (3), evaluation (1), instruments (1), and ethnographic techniques (1). It makes sense that articles in this assumption category, which is often equated with "qualitative" or "naturalistic" research, employ the greatest use of "qualitative" methods.

A number of authors employing subjective assumptions are administrators. Of the nine author fields represented among those using subjective assumptions, other fields with one article in two or more assumption areas include: student affairs personnel, higher education, sociology, education, management, and teacher education. There are 7 frequent institutional affiliations represented by authors, although only one institution has an author in more than one assumption area (Tierney at Penn State). Three of the frequent authors published at least one article using a subjective assumption, including D.G. Creamer (Creamer and Creamer, 1986), Kuh (Kuh et al., 1987), and Tierney (1987). Three of the 8 nominalist authors (37%), one of the 7 anti-positivist authors (14%), none of the 3 voluntarist authors, and 7 of the 19 idiographic authors (37%) are women.

(3). Sociology Assumption Results

(a) Status Quo vs Radical Change -

An example of status quo sociology is found in the research of Creamer and Creamer (1986). There are no examples of radical change sociology to be found in the current journal literature.

(b) Social Order versus Structural Conflict -

Most of the articles on conflict appear in two journals, JCSP/D (7) and JHE (6); while RevHE has one. The main topics which are addressed by conflict articles are minorities/blacks (9) and women/sexual abuse/gender (4). Two articles specifically address affirmative action and two more address psychology/counseling topics. Qualitative methods are used more frequently than quantitative methods by authors whose articles are coded in this assumption. Questionnaire/surveys are used in 5 articles and interviews in 5 articles. Other methods include: content analysis (3), basic statistics (2), longitudinal database (1), case studies (1), and ethnography (1). Fields represented by two or more conflict authors include sociology/social work (5), student affairs (2), and education (2). Six of the frequent institutional affiliations are represented. Only the University of California at Santa Barbara has two articles, while the rest have one. No frequent authors published an article with conflict assumptions.

Of the 14 conflict authors, 50% (7) are women. Although both men and women published conflict articles about minorities in the journal literature, only women published on issues of women/sexual abuse/gender. An example of research about the social order is found in Zusman (1986). An example of structural conflict research is presented in Henderson (1988).

(c) Consensus versus Modes of Domination -

Thirteen articles (3%) represent the domination assumption of radical change sociology, and 6 of these involve some kind of research. JHE led other journals in publishing 5 domination articles, followed by JCSP/D (4), RevHE (3), and RHE (1). Fifteen of the 30 major topic categories are discussed in at least one domination article. Topics with more than one example include: women/sexual abuse/gender (4), minorities/blacks (4), higher education (3), student development (2), college students (2), and research methodology (2). The use of quantitative methods is more frequent in this assumption category than in other categories, but sometimes qualitative methods are used. Methods used by more than one study include instrument/tests (2), basic statistics (2), and interviews (2). Seven of the 13 articles are essays. Among the authors with domination assumptions, five frequent fields are represented. Those with more than one article include sociology/social work (5) and student affairs (2). Among frequent institutional affiliations, six schools each published one article. Winston (Hughes and Winston, 1987) is the only frequent author with domination assumptions. Four of the 13 domination writers (30%) are women, a decrease from the 50% of conflict writers who are women. An example of consensus research is seen in the work of Stark et al. (1986). An example of research on modes of domination is seen in Cooper and Robinson (1987).

(d) Social Integration & Cohesion versus Contradiction

All five journals published at least one article which makes contradiction assumptions, but JHE led the way with 10 of its 86 articles (12%). JCSP/D followed with 8, RevHE 3, and RHE and AERJ with one each. The topics which are dealt with in more than one contradiction article include: women/sexual abuse/gender (11), minorities/blacks (11), faculty/professoriate (8), psychology/counseling (3), higher education (3), affirmative action (3), and academic achievement (2). A mix of qualitative and quantitative methods are employed. Interviews are used in 6 articles, case studies in one, and ethnography in one. Questionnaire/surveys are used in 7 articles and basic statistics in 7, followed by: content analysis (3), longitudinal databases (3), regression (2), MANOVA (1), and instruments/tests (1). One article uses integrative review techniques. Eight fields are represented among the authors of contradiction articles. Those fields with more than one article include: sociology/social work (7), student affairs (3), psychology/counseling (2), education in general (2), and educational studies/testing (2). Eleven frequent institutional affiliations are represented among authors; but only the University of California at Santa Barbara had two articles, while the remainder each published one article. Sedlacek (1987) is the only frequent author who uses the contradiction assumption. Thirteen of the 23 articles (57%) are written by women. An example of social integration research is Krakower and Zammuto (1987). An example of contradiction sociol-

ogy is seen in the research of Loo and Rolison (1986).

(e) Solidarity versus Emancipation -

Most of the emancipation articles are published by JHE (4), with one in RevHE. The topics of these articles are split between concerns for women/sexual abuse/gender and for minorities/blacks. Four articles touch on some aspect of the faculty/professoriate - as administrators, professionals, graduate students, or in the faculty-student relationship. Three of the articles use questionnaire/surveys. Interviews (1), longitudinal databases (1), and basic statistics (1) are each used by one article. Two authors come from sociology/social work, while the others come from psychology/counseling, education, and business/business administration. Among frequent institutional affiliations, three schools have one article. None of the frequently published authors writes with emancipation assumptions. Three of the 5 authors (60%) are women. An example of solidarity research is found in Tinto (1988). An example of emancipation research is found in the work of Schneider (1987).

(f) Need Satisfaction versus Domination -

Most of the articles with deprivation assumptions appear in either JHE (8) or JCSP/D (8), with RHE (2) and RevHE (1). Fourteen topics are covered in this literature. The topics covered in more than one article are: minorities/blacks (11), women/sexual abuse/gender (7), faculty/professoriate (4), psychology/counseling (3), higher education (3), and affirmative action (2). Research on deprivation uses a variety of quantitative and

qualitative methods. Quantitative methods which are used include: questionnaire/surveys (6), basic statistics (4), content analysis (4), longitudinal/cohort databases (2), MANOVA (1), and MANCOVA (1). Qualitative methods which are used include: interviews (6), case studies (1), and ethnography (1). Frequent fields of authors include: sociology/social work (5), student affairs (3), psychology/counseling (2), education (2), and educational studies/testing (2). Of the frequent institutional affiliations, ten schools published deprivation articles, but only the University of California at Santa Barbara published two articles. Three frequently published authors, Smart, Ethington (Smart and Ethington, 1987), and Sedlacek (1987), have one article with deprivation assumptions. Of the 19 authors, 47% (9) are women. An example of research from the need satisfaction assumption is illustrated in the work of Parker (1986). An example of domination research is the work of Smart and Ethington (1987).

(g) Actuality versus Potentiality -

Tuckman and Change (1988) present an example of the actuality assumption in research. There are no examples of potentiality sociology to be found in the current journal literature.

(4) Sociology Dimension Results

A total of 465 articles (99%) in the journal literature are coded as falling within the sociology of regulation. No articles make any radical change or potentiality assumptions. Therefore, the other assumption categories take on more importance as deter-

minants of sociological intent. Of the 30 articles which show at least one radical change sociology assumption, 14 articles show conflict assumptions, followed by: domination (13), contradiction (23), emancipation (5), and deprivation (19). Lincoln (1986) and Rossides (1987) have the only articles which mention the radical change literature in sociology.

Six articles out of the 471 (1%) meet the requirements of radical sociology. Half of these are essays, including Rossides (1987) on class conflict; Blackwell (1988) on the impact of faculty issues on minorities; and Taylor (1986) on black students on white campuses in the 1980's. The three research studies include: Loo and Rolison (1986) on the "Alienation of Ethnic Minority Students at a Predominantly White University;" Clark and Corcoran (1986) on "Perspectives on the Professional Socialization of Women;" and "Graduate Women, Sexual Harassment, and University Policy" by Schneider (1987).

Most of the articles which make radical sociology assumptions are published in JHE and JCSP/D. Conflict assumptions are published in JCSP/D (7), JHE (6), and RevHE (1); domination assumptions in JHE (5), JCSP/D (4), RevHE (3), and RHE (1); contradiction assumptions in JHE (10), JCSP/S (8), RevHE (3), RHE (1), and AERJ (1); emancipation assumptions in JHE (4) and RevHE (1); and deprivation assumptions in JHE (8), JCSP/D (8), RHE (2), and RevHE (1).

All but 10 of the frequent topics are discussed in at least one article with radical sociology assumptions. The topics which

are most often discussed include: women/sexual abuse/gender, minorities/blacks, faculty/professoriate, affirmative action, and psychology/counseling. Frequently used quantitative methods include: questionnaire/surveys, basic statistics, content analysis, longitudinal databases, instruments, and regression. Interviews are the only qualitative method used frequently, although ethnography and case studies are each used by one article.

The leading field from which radical sociology authors come is sociology/social work. Student affairs, psychology/counseling, education, and educational studies/testing are also represented by more than one author. While there are a number of administrators among the authors using subjective social science assumptions, only one radical sociology article was written by an administrator. Of the frequent institutional affiliations, 15 are represented among radical change authors. However, this figure is slightly misleading, for the only institution with more than one article in any assumption category is the University of California at Santa Barbara. Four of the frequently published authors, Smart (Smart and Ethington, 1987), Sedlacek (1987), Ethington (Ethington and Wolfle, 1986), and Winston (Hughes and Winston, 1987), use radical sociology assumptions. None of these authors have more than one article in any assumption category.

The percentage of women among all authors is approximately 30%. This varies greatly when compared with the assumptions of radical sociology. Of the conflict authors, 50% are women, fol-

lowed by: domination (31%); contradiction (57%); emancipation (60%); and deprivation (47%). Although these numbers may be too small to indicate a trend, it seems as if women are more likely than men to make use of assumptions about radical sociology. This is especially true regarding those who write the topics of women/sexual abuse/gender.

C. Overall Paradigm Results

The results of the content analysis and classification scheme using the paradigm assumption definitions from Burrell and Morgan (1979) indicate that 460 of the current journal articles (98%) are functionalist. Only a handful of studies (6, or 1%) fall into the radical structuralist paradigm, and half of these studies do not involve any form of research, but are intellectual essays. Another 5 journal articles (1%) are based upon assumptions from the interpretive paradigm, although none of these are research studies. No studies of any kind are classified within the radical humanist paradigm.

1. Functionalist Paradigm

The functionalist paradigm dominates the journal literature in higher education. In terms of social science, these 460 articles are realist, positivist, determinist, and nomothetic. Sociologically, they are concerned with status quo, social order, consensus, integration, solidarity, need satisfaction, and actuality elements of the social world.

An example of the functionalist paradigm is found in Pascarella et al.'s (1988) research on "The Influence of College on

Humanitarian/Civic Involvement Values." Causal models and a longitudinal database are used with regression analysis to study the development of values through student involvement.

All topics, methods, fields, frequent authors, authorship types, and frequent institutional affiliations are represented in the functionalist paradigm. Some of the research studies which are called naturalistic and use idiographic methods such as case studies fall into the functionalist cell because their authors' inherent realist, positivist, and determinist assumptions outweigh their interpretive intentions.

2. Radical Structuralist Paradigm

A handful of articles (6), or approximately 1%, fall into the radical structuralist paradigm. In terms of social science, these articles follow the functionalist, objective norm and are realist, positivist, determinist, and nomothetic. However, in their approach to sociology, they are concerned with conflict, contradiction, domination, emancipation, and deprivation. None of these articles are concerned with assumptions of radical change or potentiality.

Three of the articles in this paradigm are essays, including Rossides (1987) on the higher education reports; Blackwell (1988) on the impact of faculty issues on minorities; and Taylor (1986) on black students on white campuses in the 1980's. Rossides (1987) is the only author to touch on critical theory.

Research studies by Loo and Rolison (1986), Clark and Corcoran (1986), and Schneider (1987) are classified as radical

structuralist. Loo and Rolison (1986) use interviews and a survey sample to research the culture of alienation faced by ethnic minority students at a predominantly white university. Interviews are the primary method which Clark and Corcoran (1986) use to study affirmative action and the professional socialization of women. Graduate women, sexual harassment, and university policy are the topics of Schneider's (1987) questionnaire research.

Four of the 6 radical structuralist articles were published in JHE, while JCSP/D and RevHE published one. The main topics of radical structural articles are: minorities/blacks (3), women/ sexual abuse/gender (2), and class conflict (1). Interviews are used in two studies, surveys and questionnaires in another. Except for one student affairs administrator, Blackwell (1988) at Loyola University, these radical structuralist authors come from outside of education. Four authors are sociologists; another represents education and sociology; and another is from psychology. Four of the authors come from frequent institutional affiliations, including the University of Minnesota, the University of California at Santa Barbara, the University of Massachusetts at Amherst, and Loyola University. None of the frequently published authors employ the radical structuralist paradigm. In terms of author gender, three radical structuralists are men, two are women (33%), and one author's sex could not be determined from the journal information.

3. Interpretive Paradigm

Five articles, or 1% of the total, fall within the interpretive paradigm. In social science, these articles depart significantly from the functionalist norm and are nominalist, anti-positivist, voluntarist, and idiographic. Sociologically, they are no different from functionalism, and are concerned with status quo, social order, consensus, integration, solidarity, and actuality assumptions.

All of the articles are essays. None of the topics discussed in the radical structuralist paradigm show up again in the interpretive paradigm articles. Lincoln (1986), Keller (1986), and Tierney (1987) each present their views on research in higher education. Lincoln (1986) discusses the value of employing other types of critiques and argues that new paradigms of inquiry "start when generalization stops." Keller (1986) talks about the "Chains That Bind Education Research," and criticizes social science inquiry and methodology in favor of humanistic, impressionist accounts. Tierney (1987) and Menges (1988) both mention "interpretive" research specifically; Tierney in the context of organizational theory and nominalist views of reality, and Menges in analyzing research on teaching and learning. Menges believes that the positivist paradigm is "in disrepute." He is in favor of an interpretive social science which recognizes the complexities of human actions. Wilson (1988) focuses on the ways in which positivism frames research on the evaluation of teaching, Wilson uses the ideas of Freire to examine and critique the

traditional "banking concept of education."

RevHE is the only journal to publish interpretive articles. Only a handful of topics are covered, including higher education (4), instruction/teaching (2), and organizational theory (1). Unlike the radical structuralist paradigm, none of these authors come from outside of education. Lincoln and Tierney are professors of higher education. Although Keller worked in private industry at the time of his article, he is now at the University of Pennsylvania. Menges comes from education and social policy, and Wilson is in teacher education. Only Tierney represents a frequent institutional affiliation, Penn State. Tierney is the only frequently published author among the five interpretivists. Only one author (Lincoln) is a woman, making the percentage of women authors (20%) lower than the average (30%).

4. Radical Humanist Paradigm

There are no examples of the radical humanist paradigm to be found in the literature, in part because these assumptions are the farthest away from functionalism. The radical humanist paradigm is nominalist, anti-positivist, voluntarist, and idiographic in its approach to social science; and is concerned sociologically with assumptions of radical change, conflict, domination, contradiction, emancipation, deprivation, and potentiality in the social world.

Since it is important to explore in the case studies how the radical humanist paradigm might effect research in higher education, additional searches of the literature were undertaken by

checking bibliographies, using the ERIC database, and using various print indexes. Each example which was found was analyzed using the same traditional and paradigmatic content analysis procedures. Only one example of the radical humanist paradigm was located in the current higher education literature - a research study by Belenky et al. (1986) entitled Women's Ways of Knowing: The Development of Self, Voice, and Mind.

VIII. Conclusions

The purpose of this research was to analyze the higher education knowledge base according to the paradigm schema of Burrell and Morgan. The definitions of assumptions from Burrell and Morgan proved to be useful in their application to higher education. It is possible to locate, label, and discuss each assumption type within the current journal literature. Clearly, there are meta-theoretical assumptions which undergird scholars' approaches to research. The language of the dimensions of subjective-objective social science and regulation-radical change sociology provides a way to get at these meta-theoretical assumptions. This is not to say that the Burrell and Morgan paradigm schema is exhaustive or definitive, just that it is helpful in comparing and contrasting the approaches, methodologies, and findings of research studies which have different inherent assumptions about social science and the social world.

The results of the bibliographic, demographic, and paradigmatic content analyses are, to a large extent, predictable. It is

not surprising that the bulk of research in the current journal literature is functionalist, that there are no examples from the radical humanist paradigm, and that only a few radical structuralist studies are published. What is surprising is the complete lack of research in the interpretive cell, especially when there is a perception among some scholars that qualitative methods have finally become acceptable.

Certainly, the kind of qualitative, naturalistic inquiry advocated by Lincoln and Guba (1985, 1989) has taken hold in the field. Why is this not reflected in the results? To be labeled as interpretive, a majority of the subjective assumptions have to be present. Perhaps the definitions used are too stringent. Several "naturalistic" studies are not coded as subjective. Of the total of 25 articles which show evidence of at least one subjective assumption, there are 19 idiographic, 8 nominalist, 7 anti-positivist, and 3 voluntarist examples. These 25 articles represent the "leakage" which is occurring as scholars move from functionalism toward interpretivism. The majority of these articles are, noticeably, essays, and do not involve any form of subjective or interpretive research. Apparently, interpretive research is either not being conducted or is not being published in the core journal literature.

Although no "pure" examples of research which use all four subjective assumptions are found in the journal literature, some aspects of the subjective dimension are taken into account by mainstream scholars such as Lincoln (1986), Keller (1986), Kuh et

al. (1986a), Creamer and Creamer (1986), and Tierney (1987). The RevHE published all five of the interpretive and subjective dimension essays. JHE and JCSP/D each published a few articles using at least one subjective assumption. In a sense, the RevHE appears to have become a haven for eclectic, non-traditional research. This image is countered, though, by regular inclusion of sophisticated nomothetic research. Most of the research on the higher education journal literature was published in RevHE and JCSP/D. These journals are the only outlets in which scholars will find this type of generalist introspection into the knowledge base.

This application of paradigms puts the debate over qualitative versus quantitative methods in context. Although the journals do publish articles which employ "qualitative methods," the data show that both quantitative and qualitative methods are used in a realist, positivist, determinist, and nomothetic manner.

It is predictable that there would be few studies in the radical sociology dimension. The paucity of subjective research to be found in the literature foreshadowed the lack of radical humanist examples. What is most striking about the 6 radical structuralist articles, half of which involve research, is that they touch on only two topical areas - women/sexual abuse/gender, and minorities/blacks.

Thirty articles make use of at least one assumption of radical sociology. These studies represent the leakage from the

functionalist to the radical structuralist paradigms. Assumptions are evident in the form of conflict (14), domination (13), contradiction (23), emancipation (5), and deprivation (19). No assumptions of radical change or potentiality are present in the journal literature. One explanation for this absence is that the definitions may have been either too stringent or too ambiguous.

These two findings, that the radical sociology literature deals only with issues of women and minorities and that there is no discussion of radical change or potentiality, suggest that the higher education knowledge base is quite limited in its approach to critical theory.

There are no indications in the journal literature that the patterns found in the content analyses will change. This presents two implications:

First, there is no reason to expect that a greater proportion of research studies will make use of subjective assumptions. Regardless of how many essays are written about the nature of naturalistic and ethnographic inquiry, or about the emergence of new paradigms, little significant research will probably be done with these methodologies during the next five years unless the paradigm debate has more of an impact on the community of higher education scholars.

The second implication of the results from this research is that the influence of radical sociology is even less than that of subjective social science. There is no sign that scholars are beginning to pay greater attention to any forms of oppression

from a radical sociology perspective. If anything, the domination by the functionalist paradigm of research on women and minorities forebodes lack of growth in radical sociology. It is little wonder that it is so difficult to locate an example of higher education research in the radical humanist cell.

The higher education knowledge base is dominated by the assumptions of objective social science and the sociology of regulation. The content analysis results described in this paper establish the fixation of the higher education literature in functionalism. Scholars have been drawing a map of knowledge which includes only one-fourth of the known world. To most paradigm cartographers, the world is flat and two-dimensional. What has happened to the knowledge base as a result of this failure to explore the new world of alternative paradigms?

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